F·A·A·M facility for airborne atmospheric measurements

FLIGHT FOLDER

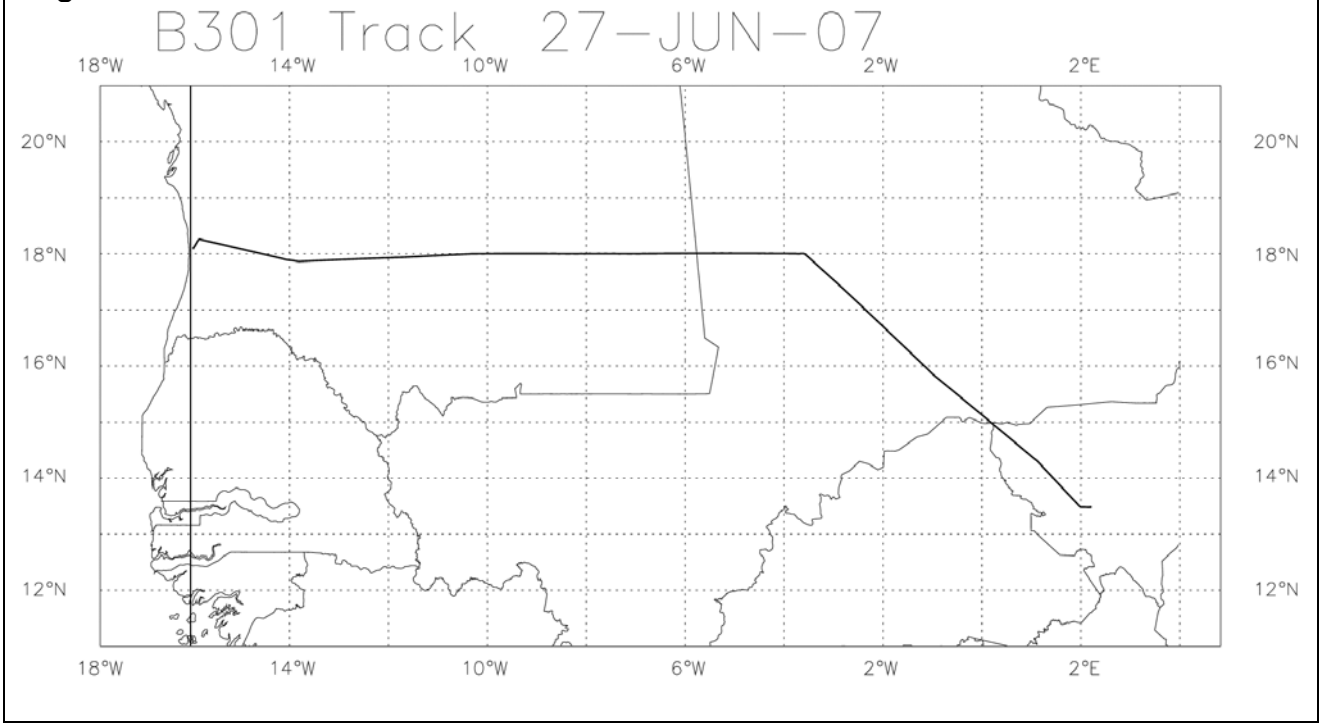
Flight No.:	B301
Date:	27 June 2007
Take Off	09:51:19
Landing:	14:31:00
Flight Time	4h 39m 41s

Campaign: GERBIL

Operating Area: Niamey -> Nouakchott

POB	Position	Name	Institute
1	Captain	Alan Foster	Directflight
2	Co-pilot	Ian Ramsay-Rae	Directflight
3	CCM1	Dawn Quinn	Directflight
4	core chem.	Kate Turnbull	FAAM
5	Flight Manager	Jim Crawford	FAAM
6	Mission scientist 1	Jim Haywood	Met Office
7	Mission scientist 2	Ben Johnson	Met Office
8	AVAPS	Doug Anderson	FAAM
9	Filters	Paula Formenti	University of Paris 12 (LISA)
10	ARIES	Stuart Rogers	Met Office
11	CCM2	Jackie Mulholland	Directflight
12	Neph/PSAP/SWS	Andy Wilson	Met Office
13	Cloud Physics	Martyn Pickering	Met Office
14	Mission Scientist 3	John Marsham	Leeds University

Flight Track:

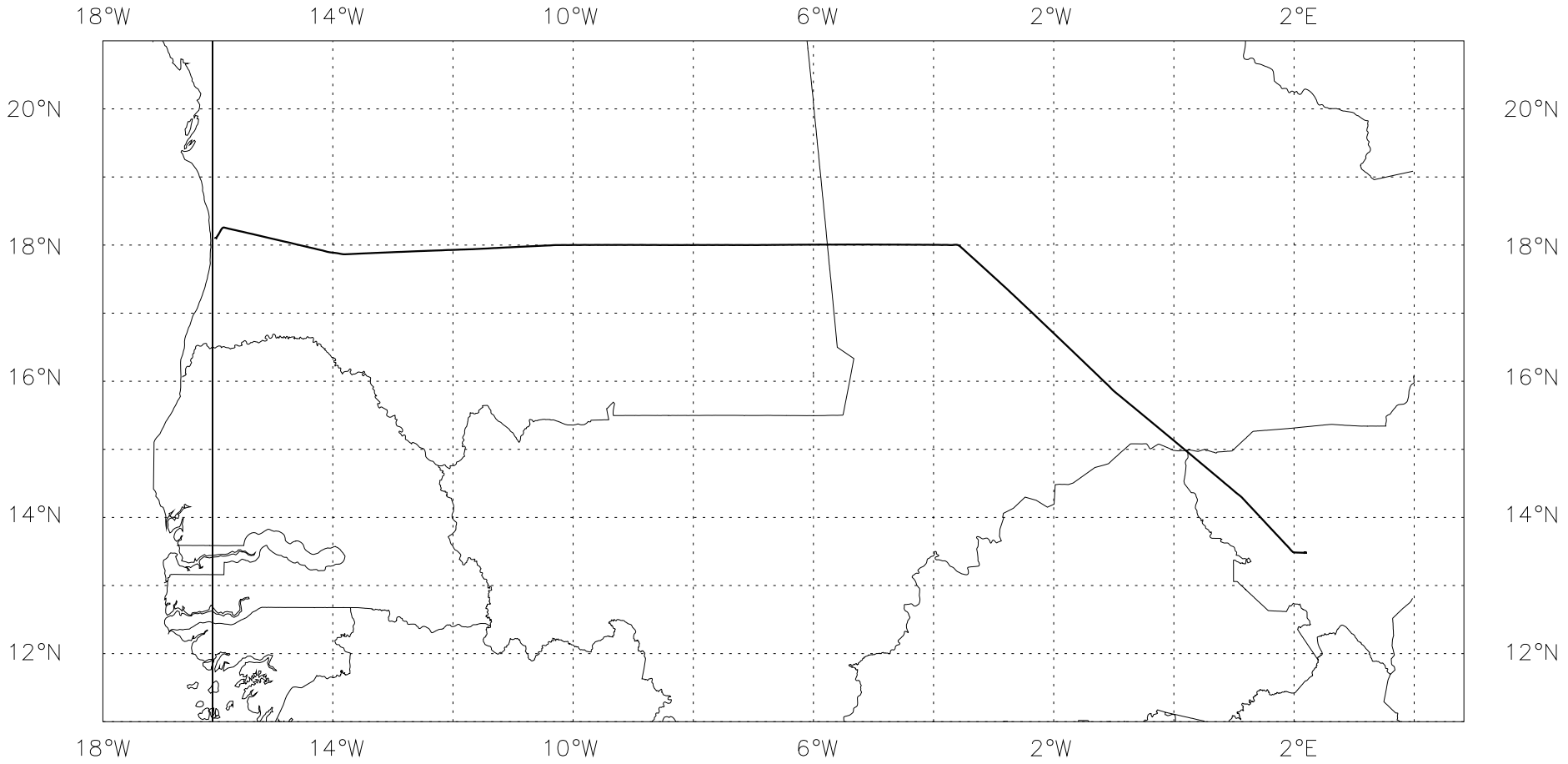


FLIGHT SUMMARY

Flight No B301
Date: 27 June 2007
Project: GERBIL
Location: Niamey -> Nouakchott

Start Time	End Time	Event	Height (s)	Hdg	Comments
093236		gin	0.80 kft	097	on
093248		inu	0.81 kft	097	to navigate
093302		cgps	0.80 kft	097	B301cgps.log
093319		wow	0.80 kft	097	set
094608		ASP	0.80 kft	086	open
095119		T/O	0.78 kft	267	Niamey
095200	101434	Profile 1	1.3 - 22.0 kft	269	start at T/O
095217		psap	1.5 kft	270	flow on at T/O
095237		heimann	1.8 kft	270	open at 100ft
095543		video	4.4 kft	313	#1 ffc, #2 dfc; start
101435	105350	Run 1.1	22.0 kft	309	
101441		sonde1	22.0 kft	310	
101927		bbr	22.0 kft	310	retract
102134		heimann	22.0 kft	311	cal 11
103358		Video	22.0 kft	309	#1 ffc, #2 dfc(change)
103956		Sonde 2	22.0 kft	313	
105350	111343	Profile 2	22.0 - 2.2 kft	313	
105423		bbr	21.6 kft	314	extend
105434		heimann	21.4 kft	314	cal 11
111343	111717	Run 2.1	2.2 kft	306	
111445		!	2.2 kft	305	2300ft on qnh1018
111607		bbr	2.2 kft	306	retract
111807		Profile 3	2.2 - 2.4 kft	273	
111807	133221	Run 3.1	2.9 kft	265	
112803		Video	2.9 kft	271	#1, #2 end
112827		Video	2.9 kft	270	#3 ffc & #4dfc start
114130		psap	2.9 kft	271	filter change 1>2
120821		psap	2.9 kft	269	filter change 2>3
130145		Video	2.9 kft	272	#3 #4 end
130211		Video	2.9 kft	272	#5 ffc, #6 dfc; start
133221	135031	Profile 4	2.9 - 20.0 kft	267	
133409		bbr	4.6 kft	268	extend
133424		heimann	4.8 kft	268	cal 14
134008		gin	10.4 kft	269	recycled
135031	140456	Run 4.1	20.0 kft	267	
135046		Sonde3	20.0 kft	268	
140456	143100	Profile 5	20.0 - 0.08 kft		
135103		bbr	20.0 kft	268	retract
142503		P5	2.1 kft	283	interrupt
142717		P5	2.1 kft	207	resumed
143100		Land	0.08 kft	218	nouakchott

B301 Track 27-JUN-07



FAAM sortie brief

GERBILS

Flight No: B301 27th June 2007

Objectives

1. Validation of CAMM dust forecast.
2. Measure radiative effect of Saharan dust over the dessert.
3. Insitu sampling of Saharan dust.
4. Measure the surface albedo and surface longwave emission of the Sahara dessert along 18N.

Location

From Niamey to Nouakchott over dessert areas along 18N.

Expected weather

Cloudy and relatively clean atmosphere near Niamey. Moderate dust loadings along 18N. Thin cirrus likely all the way along 18N.

Special requirements

Dropsondes.

Instruments of importance

Nephelometers (wet and dry)
PCASP
PSAP
BBRs
SWS
ARIES

Flight pattern

1. Take off from Niamey at 10Z (11L).
2. Profile climb to above dust layer at 1000ft/min, then accelerate climb to FL240 once above dust [25mins].
3. SLR at FL240 altitude towards 18N 3.6W (FIR boundary) [40mins, T=65mins].
4. Drop a sonde 20mins after start of high-level SLR.
5. Profile down to low-level (suggest 3,000ft) at 1000ft/min in dust layer aiming to be at low-levels on reaching FIR boundary [20mins, T=85mins].
6. SLR along 18N at low-level (suggest 3,000ft) until approximately 10W (KONAD) [120mins, T=205mins].
7. Profile ascent to a level above dust (suggest FL200) at 1000ft/min, followed by SLR at that level [45mins, T=250mins].
8. Profile descent into Nouakchott at 1000ft/min [20mins, T=270mins].
9. Land Nouakchot. Total time = 4:30.

Mission scientist debrief

B301 – GERBILS flight Niamey to Nouakchott

Location

From Niamey to 18N 3.6W and along 18N from 3.6W to 16W (Nouakchott).

Mission aims

Radiative effect of Saharan dust over North Africa. Insitu sampling of Saharan dust aerosol. Surface characterization. CAMM dust forecast validation.

Weather

Extensive mid and high level cloud around Niamey. Clearing up on reaching 18N but still some cirrus at some points along 18N later in flight.

Flight plans

No pirouettes. Take off 10Z from Niamey. Profile ascent to FL220 showed very little aerosol in BL but reasonable dust above 5000ft (neph 50-100). SLR for 40mins at FL220 won't be much use due to cloud both above and below. Profile to 2,300ft (MPA) finishing at 18N 3.6W. Quick run at 2,300ft then ascent to 3000ft due to terrain and poor visibility. A 2:15 run at 3000ft along 18N. Dust concentration was moderate or high all the way. Variations in dust colour, angstrom exponent, size distribution and neph scattering noted along the way. The thickest bit of dust was in a very shallow layer below 5000ft, thought to be produced by a cold pool / gust front outflow from large meso-scale convective systems to the south. Dust generally decreased along run and became finer particles with less negative angstrom exponent. Low-level run finished at 11.6W with a profile ascent to FL200, a short run at that level and a profile descent into Nouakchott. Coincidence with MISR overpass was achieved at 18N 3.6-5.5W about 30-60mins after the overpass time. Sky was observed to be clear (can't rule out very thin cirrus) for this bit of work and SWS did scanning runs and a series of up and down viewing. Later on cirrus was observed so SWS looked down to characterise surface. During last 10mins of low-level leg SWS looked up and down as cirrus had cleared. Three sondes dropped. Two on the high-level SLR between Niamey and 18N line, and one at the beginning of the final SLR at 18N 13W.

Summary

Excellent flight for insitu characterization and validation of CAMM dust concentration. Also should provide another MISR comparison case. Surface characterizations should be possible along much of the low-level run although there was significant dust below that might be a problem in the thickest bits of dust.

Mission Scientist's Log

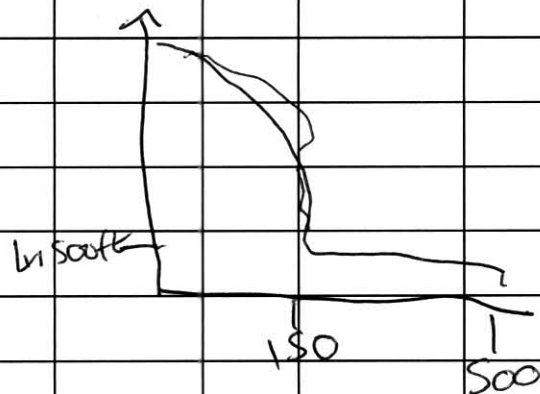
Flight No **B**...301... Date 27/6/07 Name Ben Johnson Page 1 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
095119	T/O			NIAMEY	6/8 Mid and upper cloud from
095119	P1				convective systems of
101135	~~P1.1~~				previous evening/night
101435	End	FL220			
101509	Drop1				
			FL200		$\tau_{aerosol} \sim 0.3$
					← dust
			FL090		
			3,000ft		↕ BL; anthropogenic aersol
			0		→ Neph
1030		FL220	310	15.3N 0.3W	patchy but quite thick and
					extensive cloud above and below
103956	Drop2	FL220	315	16.N 1.1W	
1040					Dust thickening below
					cirrus thinning out above
					generally cirrus in discrete small patches.
105350	P2	FL220	315	16.9N 2.3W	
1100		FL170	"	17N 2.5W	Dust top at FL170
1103					cirrus look like its
113143	End				gone
113143	P2.1	2,300ft			~ 1250 AGL

Mission Scientist's Log

Flight No **B**301 Date 27/6/07 Name Ben Johnson Page 2 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
1117	P3	2,300ft	220	18N 3.6W	Run at 2,300ft in
		~300ft		FIR	very thick dust near
				boundary	surface neph ~ 500
111807	R3.1	300ft		18N 3.7W	Since we think no cirrus
					above doing a [redacted]
					look up look down pattern
1134					scanning run with SWS
1134					neph falling to 300
					Satellite suggests this is a cold
					pool / dust front induced dust
					from last night's
					MCS.
					Variations of sand dark grey
					colour red and white
					pockets and dunes.
BL rolls - wind variations periodically					
1145					Neph upto 400
1145		PSAP ~		$33 \times 10^{-6} m^{-1}$	
				$(\omega)_{dust} =$	0.9 - 0.95



KONAS ETA 1330 start of ascent

Mission Scientist's Log

Flight No **B** 301 Date 27/6/07 Name Ben Johnson Page 3 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
1159				18N 6W	Beneath a finger of cirrus according to MSG satellite
1205		3000ft	270	6.3W 18N	Noph falling to 250 visibility improving humidity dropping, wind easing, gradually along run wind is from west
		Albedo ~ 0.45			
1218		Cirrus overhead, slightly to the left (South) SWS & AIRES pointing down because of cirrus.			
1215		Dust above is looking less thick now dust filter from past hour looks red. (2 taken each 30 mins)			
1225		Noph dropping to 130 Should get good surface characterisation here			(7.5W) ~1900ft agl
1230				18N 8W	surface albedo dropping to 0.2 over dark rocky valley.

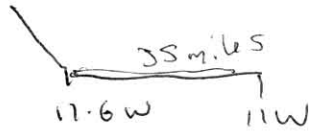
0-SW

Mission Scientist's Log

Flight No **B** 301 Date 27/6/07 Name Ben Johnson Page 4 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
1255	R3-1	3000	270	18N 9.3W	Cirrus still above so SWS & AIRES looking down surface is quite visible even though rad alt is 2200ft so surface characterization should be ok
	Bad continued				
1230-1300					neph ~ 120
		Variations in			color of dust white/yellow/red with neph showing variable red scattering
		1130-1200			much more red
		1200-1300			more equal scattering
	PCASP fairly regular along run despite large variation in neph scattering. PCASP shows bigger particles earlier on (before 6W). This was confirmed by pink areas				on MSG image.
1305				18N 10W	Slight increase in neph and water vapour (influence of cold pool/ dust front/outflow?)
		LOCAR			model predicted this well.

Mission Scientist's Log



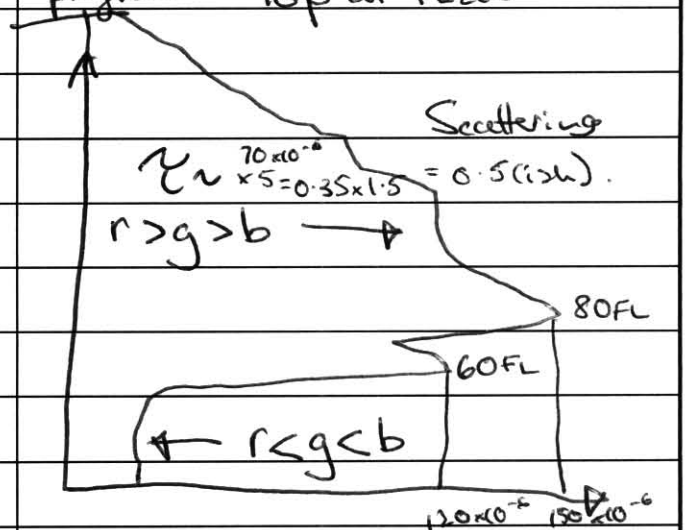
Flight No **B** 301 Date 27/6/07 Name Ben Johnson Page 5 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
13:32:21	P4	3000	270	11.6W	18N ~~[illegible]~~
13:32:21	(End of R3.1)				Seems to be free of cirrus above so last 10 mins had SWS & AIRES pointing ↑ ↓ ↑ ↓
13:50:31	End P4	FL200	270	18N 13W	Dust top at FL170
13:50:46	Sonde3	"	"	"	Few patches of cirrus ahead, no so much behind (hopefully SWS manouvers were in clear sky)
	less dust on this	coming down into			profile than on P3 the dust at 3.6W
		Caused ~0.8 on P3	~0.35		(0.2 in the Surface layer) on P4
					FL170 – FL140 – FL100 – FL070 100 Neph
13:50:31	R4.1	FL200			
14:03:52	PS	FL200			
		~SFC			

14:30 ish LAND

Mission Scientist's Log
Supplemental Log

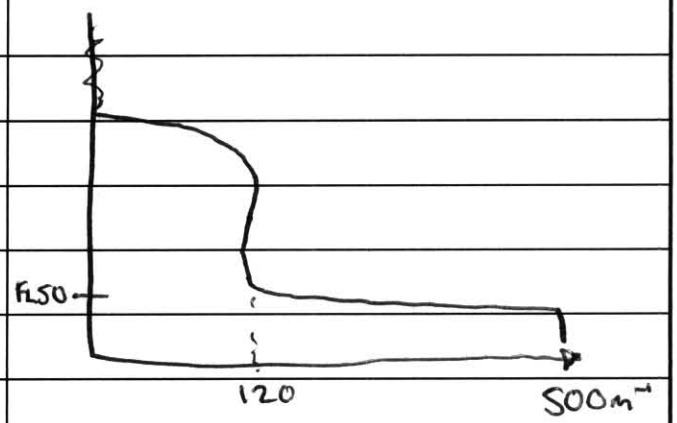
Flight No **B**.301..... Date 27/06/07 Name Jim Haywood Page 1 of .....

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
09:41					Lots of alto-stratus –
					no point in doing pirouettes.
					T = 31C, Td = 21C.
					WS = 17 knots / 88 degs.
09:52:00	P1				Interesting vertical profile with
					low level monsoon air influencing
					the surface. Different to previous
					profiles. Top at FL200
					
					Tephi shows moist layers 450-550mb
10:14:35	End P1 / St R1	FL220 →			
10:14:41		FL220 →		14.5N	Launch sonde #1.
10:39:56		FL220 →		16N	Launch sonde #2.
					Still Ci above.
10:53:50	End R1 / St P2	FL220 ↓		16°54'N	Still no cloud below.
11:00					Ci almost gone – not
					affecting upper BBRs now.

Mission Scientist's Log

Supplemental Log

Flight No **B**...301..... Date 27/06/07 Name Jim Haywood Page 2 of .....

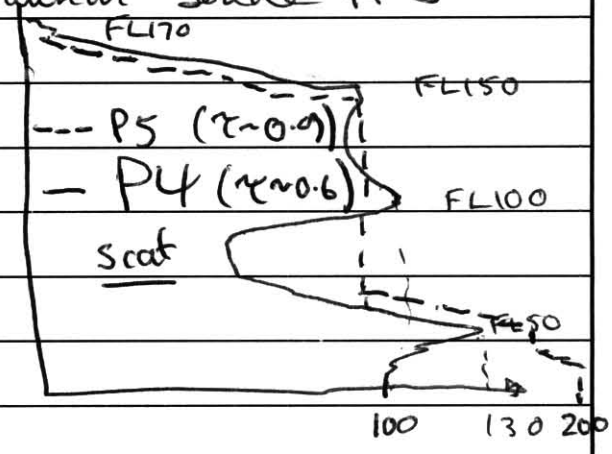
GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
11:06					In P2 can't see ground from
					10,000ft or 7000ft. Visible from
					~6,000ft.
11:14:33	End P2 / St R2-1	FL23	306		
11:16:50					Passing FIR
11:17:17	End R2-1 / St P3	FL23 ↑			
11:17:35	End P3 / St R3-1	FL30 →	~2000ft AGL.		SWS + ARIES moving to
					scanning U, C, D. Up cal down
.					R3-1 Appears to be free from Ci
					above + no cloud above
					or below. Dusty with
					haze reaching $500\times10^{-6}m^{-1}$
					but dropping to $300\times10^{-6}m^{-1}$
11:45					at 11:35. Back to $400\times10^{-6}m^{-1}$
					at 11:45.
11:55					Still no Ci above.
12:03					—" —
12:17					Ci above reported →
					SWS & ARIES to look down

Mission Scientist's Log

Supplemental Log.

Flight No **B** 301 Date 27/06/07 Name Jim Haywood Page 3 of .....

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
12:37					Have passed a dark
					rock formation at 12:33.
12:41					Still Ci above.
12:55					The vis observations show
					that white transported dust
					is in the lee of the yellow
					dunes.
13:15					Alot of HF interference
					with lower pyrgeometer
13:32:21	End R3.1 St P4	FL30↑			between 13:15 → 13:25.
13 50 31	End P4 St R4.1				Some Ci around still.
~~14:04:5~~					Launch Sonde #3
14:03:52	End R4.1				
14:04:56	St P5				



CLOUD PHYSICS LOG Flight B 301

Date: 27/6/07	Operator: MAP	DRS Time: 08:45:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 1 of 4

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
09:51:00																	Start P1 from Takeoff
09:53:59	80	0.08	1	5	1												FL030
09:55:21	150	0.09		10	1												FL040
09:56:26	150	0.11		40	5												FL050
09:57:35	120	0.11		60	3												FL060
09:58:36	105	0.11		60	4												FL070
09:59:48	130	0.12		70	6												FL080
10:00:54	130	0.12	2	70	10												FL090
10:01:57	130	0.12		60	7												FL100
10:02:55	100	0.12	3	50	3												FL110
10:03:58	95	0.13		50	3												FL120 PCASP Heater on
10:05:01	95	0.12		50	2												FL130
10:05:59	85	0.13	4	50	3												FL140
10:07:02	75	0.10		15	3												FL150
10:08:02	35	0.15		10	2												FL160
10:09:02	15	0.15		7	2												FL170
10:10:11	10	0.20		5	1												FL180
10:11:20	3	0.12	5	2	1												FL190
10:12:20	1	0.04		1													FL200
10:13:30	1	0.05		1													FL210
10:14:30																	End of P1 & Start Run 1.1 @ FL220
10:15:00	1	0.08	6	1													
10:20:00	1	0.06															
10:25:00	3	0.05		1													
10:30:00	1	0.05		2													
10:35:00	1	0.06		1													
10:40:00	1	0.05															
10:45:00	1	0.05															
10:50:00	1	0.09															
10:53:47																	End of Run 1.1 & Start P2 from FL220
10:54:55	3	0.09		1													FL210
10:55:56	2	0.08	7														FL200
10:56:54	1	0.06		1													FL190
10:57:52	2	0.08		1													FL180
10:58:51	10	0.12		20	3												FL170
10:59:46	70	0.13		60	3												FL160
11:00:43	85	0.14		90	8												FL150
11:01:57	100	0.13		80	9												FL140
11:02:47	90	0.14	8	80	8												FL130
11:03:48	105	0.13		80	10												FL120
11:04:46	110	0.13	9	90	8												FL110
11:05:43	140	0.13		90	8												FL100
11:06:48	155	0.12	10	100	8												FL090 PCASP heater off
11:07:51	170	0.12		100	8												FL080
11:08:55	180	0.12	11	100	10												FL070
11:10:01	175	0.12	12	100	10												FL060

CLOUD PHYSICS LOG Flight B 301

Date: 27/6/07	Operator: MAP	DRS Time: 08:45:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 2 of 4

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
11:10:56	180	0.14	14	100	10												FL050
11:11:50	355	0.17	15	300	40	5	200										FL040
11:12:55	400	0.16	17	300	30	6	200										FL030
11:13:50																	End of P2 & Start Run 2.1 @ FL022
11:14:00	380	0.16	20	300	40	3	200										
11:16:00	400	0.16	29	300	20	3	100										
11:17:12																	End of Run 2.1 & Start P3
11:18:04																	End of P3 & Start Run 3.1 @ FL030
11:19:00	350	0.16	41	300	30	4	150										
11:21:00	340	0.15	42	200	30	4	150										
11:23:00	300	0.15		200	20	4	150										
11:25:00	380	0.15		200	20	5	150										
11:27:00	300	0.14		200	10	7	150										
11:29:00	350	0.14		200	10	2	100										
11:31:00	340	0.13		150	10	5	100										
11:33:00	360	0.14		150	10	4	150										Note the drop off in detected particles in FFSSP
11:35:00	310	0.13		150	10	4	200										
11:37:00	310	0.13		125	10	7	200										
11:39:00	320	0.14		150	10	4	600										
11:41:00	340	0.14		150	15	7	150										
11:43:00	300	0.14		150	15	4	100										
11:45:00	310	0.14		150	15	4	100										
11:47:00	330	0.15		200	10	1	100										
11:49:00	360	0.15		300	10	4	200										
11:51:00	360	0.15		300	10	3	300										
11:53:00	350	0.15		300	10	3	300										
11:55:00	340	0.15	43	300	20	1	150										
11:57:00	340	0.15		300	10	2											
11:59:00	335	0.14	48	200	10	1	150										
12:01:00	310	0.13	52	150	10	1	200										
12:03:00	300	0.12	54	100	3	4	75										
12:05:00	290	0.12	57	100	8	1	100										
12:07:00	260	0.12	59	100	8	2	50										
12:09:00	280	0.12	60	100	10	1	200										
12:11:00	280	0.11	63	100	8	1	300										
12:13:00	300	0.11	65	100	8												
12:15:00	320	0.11	66	100	10	4	300										
12:17:00	280	0.12	68	100	9												
12:19:00	280	0.11	69	90	9	1	150										
12:21:00	300	0.10	70	90	8												
12:23:00	300	0.10	74	80	8												
12:25:00	300	0.10	78	80	8												
12:27:00	270	0.09	81	80	8												
12:29:00	280	0.09	85	70	5	1	100										
12:31:00	290	0.09	88	70	5	1	100										
12:33:00	300	0.10	91	100	5	1	100										

CLOUD PHYSICS LOG Flight B 301

Date: 27/6/07	Operator: MAP	DRS Time: 08:45:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 3 of 4

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
12:35:00	300	0.09	94	80	8												
12:37:00	300	0.10	99	80	3												
12:39:00	290	0.10	101	80	3												
12:41:00	300	0.10	104	70	3												
12:43:00	250	0.10	106	70	4												
12:45:00	260	0.10	109	70	4												
12:47:00	260	0.10	113	70	4												
12:49:00	290	0.10	116	70	4												
12:51:00	270	0.10	119	70	3												
12:53:00	270	0.09	121	60	3												
12:55:00	290	0.09	125	70	4												
12:57:00	290	0.09	128	70	3												
12:59:00	270	0.10	130	60	3												
13:01:00	280	0.09	133	70	3												
13:03:00	290	0.10	136	80	3												
13:05:00	280	0.11	141	90	3												
13:07:00	270	0.11	142	90	6												
13:09:00	300	0.10	143	80	5												
13:11:00	300	0.10		80	3												
13:13:00	320	0.09	144	70	6												
13:15:00	325	0.09		70	3												
13:17:00	300	0.09	145	60	5												
13:19:00	305	0.09		60	3												
13:21:00	300	0.09	146	50	3												
13:23:00	305	0.09		50	3												
13:25:00	290	0.09	147	50	3												
13:27:00	240	0.09		50	2												
13:29:00	230	0.09	148	60	3												
13:31:00	250	0.09		50	3												
13:32:17																	End of Run 3.1 & Start P4
13:33:30	200	0.09	149	50	3												FL040
13:34:39	210	0.09		70	3												FL050
13:35:45	110	0.09		20	3												FL060
13:36:50	80	0.10		10	3												FL070
13:37:50	85	0.10		20	3												FL080
13:38:36	110	0.11		40	3												FL090
13:39:38	120	0.10	150	50	2												FL100
13:40:42	105	0.11		30	3												FL110
13:41:55	75	0.10		20	2												FL120 PCASP Heater on
13:42:53	85	0.09		15	1												FL130
13:44:01	90	0.11		20	3												FL140
13:45:00	100	0.11	151	20	2												FL150
13:46:00	50	0.11		10	1												FL160
13:47:20	20	0.08		2	1												FL170
13:48:25	10	0.06		10													FL180
13:49:28	8	0.07		1	1												FL190

CLOUD PHYSICS LOG Flight B 301

Date: 27/6/07	Operator: MAP	DRS Time: 08:45:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 4 of 4

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
13:50:29																	End of P4 & Start Run 4.1 @ FL200
13:51:00	10	0.06	151	1													
13:53:00	8	0.06															
13:55:00	7	0.06		1													
13:57:00	10	0.06		1													
13:59:00	10	0.06															
14:01:00	7	0.06		1													
14:03:00	7	0.06		1													
14:03:44																	End of Run 4.1 & Start P5 from FL200
14:04:02	6	0.06		1													FL190
14:05:20	13	0.06		2													FL180
14:07:33	30	0.06		10													FL170
14:08:33	90	0.10		20	5												FL160
14:09:47	160	0.11		50	4												FL150
14:10:49	145	0.09		60	4												FL140
14:11:45	160	0.10		70	7												FL130
14:12:44	150	0.10		80	7												FL120
14:13:43	170	0.10		70	5												FL110
14:14:48	180	0.10		70	4												FL100
14:15:52	140	0.10		60	8												FL090 PCASP heater off
14:17:02	160	0.10		50	3												FL080
14:18:30	150	0.09		40	10												FL070
14:20:07	190	0.10		50	5												FL060
14:21:27	250	0.10		90	10												FL050
14:22:34	250	0.10		90	5												FL040
14:23:38	260	0.11		90	3												FL030
																	End of P on Landing
	PCASP1 Flowrate = 0.85 CC/Sec PCASP1 maybe showing some signs of ch1 noise by end of flight FFSSP had period when not many particles seemed to be detected though possibly no fault PCASP2 u/s																

FAAM Dropsonde Flight Log

Flight No.	B302	**Date**	28 Jun 2007	**Operator**	Doug Anderson	**Page No.**	1 of 1

GMT	**Sonde No.**	**Event** *eg land, splashdown*	**Comments** *pressure hPa, T deg C, RH %, wind direction deg, wind speed m/s, **longitude, latitude**, height m*
11:27:09	1	Launch	526.60 -6.80 41.58 116.10 15.00 -14.60 **-14.684400 17.928800**
11:33:47	1	Land	1005.69 30.35 999.00 259.21 3.63 -12.11 **-14.702927 17.927602**

Filter Sampling Log

Flight No: B301 **Date:** 27 JUN 2007 **Operator:** PFO

Type of filters mounted in	Top inlet	47 mm Nuclepore (0.4 µm pore size)	Bottom inlet	47 mm Nuclepore (0.4 µm pore size)

Run No	Disk #1 TOP	Disk #2 MIDDLE	Disk #3 BOTTOM	Inlet Top/ Bottom	Time On	Time Off	Flight Run	Accum Vol [l]	Comments
Filters run1	243-07	----	----	Bottom	11:14:00	11:43:00	R2.1/R3.1	1073	R2.1, 2.2 kfeet, sigma_scatt ~440 Mm-1, R3.1, 3 kfeet, sigma_scatt ~440 Mm-1
Filters run1	244-07	----	----	Top	11:14:00	11:43:00	R2.1/R3.1	1465	
Filters run 2	245-07	----	----	Bottom	11:45:40	12:15:00	R3.1	1040	R3.1, 3 kfeet, sigma_scatt ~440 Mm-1
Filters run 2	246-07	----	----	Top	11:45:40	12:15:00	R3.1	1505	
Filters run 3	247-07	----	----	Bottom	12:19:00	12:49:00	R3.1	1101	R3.1, 3 kfeet, sigma_scatt ~160 Mm-1
Filters run 3	248-07	----	----	Top	12:19:00	12:49:00	R3.1	1450	
Filters run 4	257-07	----	----	Bottom	12:52:40	13:32:21	R3.1	1400	R3.1, 3 kfeet, sigma_scatt ~110 Mm-1
Filters run 4	249-07	----	----	Top	12:52:40	13:32:21	R3.1	1976	
Filters run 5	258-07	----	----	Bottom	----	----	----	----	BLANK
Filters run 5	250-07	----	----	Top	----	----	----	----	BLANK

B301_SWS_SHIMS_EventLog.txt

```
08:33:49.28  ---      -     -     -     -
08:33:49.28  ---      -     -     -     -  +++ SOFTWARE START/RESTART +++
08:33:49.28  ---      -     -     -     -  +++ hh:mm:ss.ff / Instr / Posn / Period /
                                             tVIS/ tNIR / Comment +++
08:33:49.28  ---      -     -     -     -  +++ Flight no. B301
08:33:49.28  ---      -     -     -     -
08:34:02.97  SWS      -     -     -     -  Initialization: VIS OK NIR OK
08:34:05.75  USH      -     -     -     -  Initialization: VIS OK NIR OK
08:34:08.81  LSH      -     -     -     -  Initialization: VIS OK NIR OK
08:34:23.87  SWS      -     -   500     -  VIS int.time changed from 10ms to 500ms.
08:34:26.99  SWS      -     -     -   750  NIR int.time changed from 10ms to 750ms.
08:34:40.83  USH      -     -   500     -  VIS int.time changed from 10ms to 500ms.
08:34:43.98  USH      -     -     -   750  NIR int.time changed from 10ms to 750ms.
08:34:46.98  LSH      -     -   750     -  VIS int.time changed from 10ms to 750ms.
08:34:50.58  LSH      -     -     -   750  NIR int.time changed from 10ms to 750ms.
08:34:53.28  SWS      -     -     -     -  Manual scene recording started.
08:34:53.28  LSH      -     -     -     -  Manual scene recording started.
08:34:53.29  USH      -     -     -     -  Manual scene recording started.
08:35:08.59  USH      -     -   300     -  VIS int.time changed from 500ms to 300ms.
08:35:12.80  USH      -     -   150     -  VIS int.time changed from 300ms to 150ms.
08:35:21.23  SWS      -     -     -     -  Dark measurement started.
08:35:21.25  USH      -     -     -     -  Dark measurement started.
08:35:21.27  LSH      -     -     -     -  Dark measurement started.
08:35:25.83  ---      -     -     -     -  Reset shutters.
08:35:29.17  SWS      -     -     -     -  Manual scene recording started.
08:35:29.25  ---      -     -     -     -  Reset shutters.
08:35:29.37  USH      -     -     -     -  Manual scene recording started.
08:35:29.59  LSH      -     -     -     -  Manual scene recording started.
08:35:35.58  SWS      -     -     -     -  Dark measurement started.
08:35:37.50  USH      -     -     -     -  Dark measurement started.
08:35:41.04  LSH      -     -     -     -  Dark measurement started.
08:35:43.51  SWS      -     -     -     -  Manual scene recording started.
08:35:45.44  USH      -     -     -     -  Manual scene recording started.
08:35:48.97  LSH      -     -     -     -  Manual scene recording started.
08:35:54.54  SWS      -     -     -     -  Dark measurement started.
08:35:54.59  LSH      -     -     -     -  Dark measurement started.
08:35:54.92  USH      -     -     -     -  Dark measurement started.
08:36:02.47  SWS      -     -     -     -  Manual scene recording started.
08:36:02.68  LSH      -     -     -     -  Manual scene recording started.
08:36:02.87  USH      -     -     -     -  Manual scene recording started.
08:36:07.25  ---      -     -     -     -  *** preflight tests OK
08:36:15.74  ---      -     -     -     -  *** modules to idle
08:36:18.90  SWS      -     -     -     -  Idling
08:36:20.86  USH      -     -     -     -  Idling
08:36:22.21  LSH      -     -     -     -  Idling
09:43:42.54  ---      -     -     -     -  *** SWS tp 90AFT
09:45:56.61  ---      -     -     -     -  *** taxiing
09:48:36.71  ---      -     -     -     -  *** Flight B301 Niamey to Noaukchott
09:49:42.46  USH      -     -     -     -  Manual scene recording started.
09:49:42.46  LSH      -     -     -     -  Manual scene recording started.
09:49:42.46  SWS      -     -     -     -  Manual scene recording started.
09:49:46.65  SWS      -     -     -     -  Dark measurement started.
09:49:46.71  USH      -     -     -     -  Dark measurement started.
09:49:46.74  LSH      -     -     -     -  Dark measurement started.
09:49:54.59  SWS      -     -     -     -  Manual scene recording started.
09:49:54.80  USH      -     -     -     -  Manual scene recording started.
09:49:55.00  LSH      -     -     -     -  Manual scene recording started.
09:50:03.58  ---      -     -     -     -  *** shutters inop reseeetting
09:50:09.79  ---      -     -     -     -  Reset shutters.
09:50:12.99  ---      -     -     -     -  Reset shutters.
09:50:17.85  SWS      -     -   250     -  VIS int.time changed from 500ms to 250ms.
09:50:20.65  SWS      -     -     -   200  NIR int.time changed from 750ms to 200ms.
09:50:23.74  USH      -     -   100     -  VIS int.time changed from 150ms to 100ms.
09:50:28.03  USH      -     -     -   500  NIR int.time changed from 750ms to 500ms.
09:50:32.87  SWS      -     -    75     -  VIS int.time changed from 250ms to 75ms.
09:50:35.92  SWS      -     -     -     -  Dark measurement started.
09:50:38.37  SWS      -     -     -     -  Manual scene recording started.
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09:50:45.37	SWS	-	-	-	-	Dark measurement started.
09:50:47.81	SWS	-	-	-	-	Manual scene recording started.
09:50:48.67	USH	-	-	-	-	Dark measurement started.
09:50:51.09	LSH	-	-	-	-	Dark measurement started.
09:50:54.11	USH	-	-	-	-	Manual scene recording started.
09:50:59.03	LSH	-	-	-	-	Manual scene recording started.
09:51:19.68	---	-	-	-	-	*** take off..start of P1
09:53:20.25	SWS	-	-	-	-	Dark measurement started.
09:53:20.27	USH	-	-	-	-	Dark measurement started.
09:53:20.71	LSH	-	-	-	-	Dark measurement started.
09:53:22.71	SWS	-	-	-	-	Manual scene recording started.
09:53:25.89	USH	-	-	-	-	Manual scene recording started.
09:53:28.67	LSH	-	-	-	-	Manual scene recording started.
09:53:49.60	SWS	174R	-	-	-	Telescope position set to 174R
09:53:56.50	SWS	-	-	150	-	VIS int.time changed from 75ms to 150ms.
09:54:00.30	SWS	-	-	-	350	NIR int.time changed from 200ms to 350ms.
09:54:05.30	SWS	-	-	-	-	Dark measurement started.
09:54:09.23	SWS	-	-	-	-	Manual scene recording started.
10:07:08.76	USH	-	-	50	-	VIS int.time changed from 100ms to 50ms.
10:07:13.59	USH	-	-	-	300	NIR int.time changed from 500ms to 300ms.
10:07:17.97	SWS	-	-	-	250	NIR int.time changed from 350ms to 250ms.
10:07:20.44	SWS	-	-	100	-	VIS int.time changed from 150ms to 100ms.
10:07:22.49	SWS	-	-	-	-	Dark measurement started.
10:07:22.50	USH	-	-	-	-	Dark measurement started.
10:07:22.87	LSH	-	-	-	-	Dark measurement started.
10:07:25.43	SWS	-	-	-	-	Manual scene recording started.
10:07:26.12	USH	-	-	-	-	Manual scene recording started.
10:07:30.83	LSH	-	-	-	-	Manual scene recording started.
10:10:13.19	---	-	-	-	-	*** in cloud
10:15:44.06	---	-	-	-	-	*** in run 1 at FL220 ...above dust
10:16:02.32	---	-	-	-	-	*** cirrus above
10:24:09.14	LSH	-	-	350	-	VIS int.time changed from 750ms to 350ms.
10:24:12.53	LSH	-	-	-	-	Dark measurement started.
10:24:20.47	LSH	-	-	-	-	Manual scene recording started.
10:24:34.74	---	-	-	-	-	*** cloud above and below
10:33:00.41	---	-	-	-	-	*** sws to 176Aft
10:46:53.24	LSH	-	-	250	-	VIS int.time changed from 350ms to 250ms.
10:46:56.14	LSH	-	-	-	500	NIR int.time changed from 750ms to 500ms.
10:46:59.74	SWS	-	-	-	150	NIR int.time changed from 250ms to 150ms.
10:47:02.43	SWS	-	-	75	-	VIS int.time changed from 100ms to 75ms.
10:47:04.89	SWS	-	-	-	-	Dark measurement started.
10:47:04.92	USH	-	-	-	-	Dark measurement started.
10:47:04.94	LSH	-	-	-	-	Dark measurement started.
10:47:06.83	SWS	-	-	-	-	Manual scene recording started.
10:47:08.59	USH	-	-	-	-	Manual scene recording started.
10:47:10.74	LSH	-	-	-	-	Manual scene recording started.
10:54:00.53	---	-	-	-	-	*** end run 1 start profile 2
11:02:54.85	---	-	-	-	-	*** cirrus above almost gone
11:03:26.01	LSH	-	-	400	-	VIS int.time changed from 250ms to 400ms.
11:03:30.41	LSH	-	-	500	-	VIS int.time changed from 400ms to 500ms.
11:03:33.44	LSH	-	-	-	750	NIR int.time changed from 500ms to 750ms.
11:03:36.30	LSH	-	-	-	-	Dark measurement started.
11:03:44.24	LSH	-	-	-	-	Manual scene recording started.
11:11:56.49	---	-	-	-	-	*** at 4000ft in dust layer
11:12:08.24	---	-	-	-	-	*** sws nadir view
11:13:35.11	---	-	-	-	-	*** bumpy
11:13:50.17	---	-	-	-	-	*** ground visible below
11:14:01.10	---	-	-	-	-	*** end P2 start R2.1
11:14:14.08	---	-	-	-	-	*** at 2200ft
11:17:07.85	LSH	-	-	300	-	VIS int.time changed from 500ms to 300ms.
11:17:11.28	LSH	-	-	-	500	NIR int.time changed from 750ms to 500ms.
11:17:13.80	LSH	-	-	-	-	Dark measurement started.
11:17:19.23	LSH	-	-	-	-	Manual scene recording started.
11:17:24.19	---	-	-	-	-	*** end r2.1 start p3
11:17:29.60	SWS	-	-	-	-	Dark measurement started.
11:17:29.77	USH	-	-	-	-	Dark measurement started.
11:17:29.89	LSH	-	-	-	-	Dark measurement started.
11:17:31.53	SWS	-	-	-	-	Manual scene recording started.
11:17:33.31	USH	-	-	-	-	Manual scene recording started.

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11:17:35.44  LSH      -     -     -     -  Manual scene recording started.
11:17:43.45  USH      -     -     -     -  Dark measurement started.
11:17:43.48  LSH      -     -     -     -  Dark measurement started.
11:17:43.83  SWS      -     -     -     -  Dark measurement started.
11:17:45.79  SWS      -     -     -     -  Manual scene recording started.
11:17:46.89  USH      -     -     -     -  Manual scene recording started.
11:17:49.09  LSH      -     -     -     -  Manual scene recording started.
11:18:08.41  ---      -     -     -     -  *** end P3 start R3.1 at 3000ft
11:21:38.86  SWS     6F     -     -     -  Telescope position set to 6F
11:21:45.30  SWS      -     -    10     -  VIS int.time changed from 75ms to 10ms.
11:21:49.85  SWS      -     -     -    50  NIR int.time changed from 150ms to 50ms.
11:21:54.02  SWS      -     -     -    75  NIR int.time changed from 50ms to 75ms.
11:21:56.91  SWS      -     -    25     -  VIS int.time changed from 10ms to 25ms.
11:22:00.77  SWS      -     -     -     -  Dark measurement started.
11:22:01.97  SWS      -     -     -     -  Manual scene recording started.
11:23:27.55  SWS      -     -    10     -  VIS int.time changed from 25ms to 10ms.
11:23:30.86  SWS      -     -     -     -  Dark measurement started.
11:23:32.05  SWS      -     -     -     -  Manual scene recording started.
11:26:08.12  SWS   174R     -     -     -  Telescope position set to 174R
11:26:14.17  SWS      -     -   100     -  VIS int.time changed from 10ms to 100ms.
11:26:19.17  SWS      -     -     -   200  NIR int.time changed from 75ms to 200ms.
11:26:21.71  SWS      -     -     -     -  Dark measurement started.
11:26:24.16  SWS      -     -     -     -  Manual scene recording started.
11:27:13.95  SWS     6F     -     -     -  Telescope position set to 6F
11:27:18.32  SWS      -     -    10     -  VIS int.time changed from 100ms to 10ms.
11:27:21.05  SWS      -     -     -    75  NIR int.time changed from 200ms to 75ms.
11:27:22.43  SWS      -     -     -     -  Dark measurement started.
11:27:23.63  SWS      -     -     -     -  Manual scene recording started.
11:31:44.54  SWS   174R     -     -     -  Telescope position set to 174R
11:31:48.67  SWS      -     -    75     -  VIS int.time changed from 10ms to 75ms.
11:31:52.54  SWS      -     -     -   200  NIR int.time changed from 75ms to 200ms.
11:31:54.43  SWS      -     -     -     -  Dark measurement started.
11:31:56.87  SWS      -     -     -     -  Manual scene recording started.
11:32:48.95  SWS     6F     -     -     -  Telescope position set to 6F
11:32:51.85  SWS      -     -    10     -  VIS int.time changed from 75ms to 10ms.
11:32:55.59  SWS      -     -     -    75  NIR int.time changed from 200ms to 75ms.
11:32:57.69  SWS      -     -     -     -  Dark measurement started.
11:32:58.89  SWS      -     -     -     -  Manual scene recording started.
11:34:34.65  LSH      -     -   200     -  VIS int.time changed from 300ms to 200ms.
11:34:36.87  LSH      -     -     -     -  Dark measurement started.
11:34:42.29  LSH      -     -     -     -  Manual scene recording started.
11:37:05.66  SWS   174R     -     -     -  Telescope position set to 174R
11:37:09.91  SWS      -     -    75     -  VIS int.time changed from 10ms to 75ms.
11:37:14.47  SWS      -     -     -   200  NIR int.time changed from 75ms to 200ms.
11:37:15.94  SWS      -     -     -     -  Dark measurement started.
11:37:18.37  SWS      -     -     -     -  Manual scene recording started.
11:37:57.26  ---      -     -     -     -  *** first of 3 50A to 50F scanning runs coming
                                             up
11:38:24.09  ---      -     -     -     -  *** sws to 50A
11:38:32.30  SWS      -     -     -   300  NIR int.time changed from 200ms to 300ms.
11:38:35.23  SWS      -     -     -     -  Dark measurement started.
11:38:38.67  SWS      -     -     -     -  Manual scene recording started.
11:39:45.69  ---      -     -     -     -  *** 50F
11:40:40.22  ---      -     -     -     -  *** 40A
11:41:54.21  ---      -     -     -     -  *** 40F
11:43:04.62  ---      -     -     -     -  *** 30A
11:43:11.47  SWS      -     -    50     -  VIS int.time changed from 75ms to 50ms.
11:43:14.27  SWS      -     -     -   150  NIR int.time changed from 300ms to 150ms.
11:43:16.68  SWS      -     -     -     -  Dark measurement started.
11:43:18.62  SWS      -     -     -     -  Manual scene recording started.
11:43:28.19  SWS      -     -    25     -  VIS int.time changed from 50ms to 25ms.
11:43:29.51  SWS      -     -     -     -  Dark measurement started.
11:43:31.46  SWS      -     -     -     -  Manual scene recording started.
11:44:14.09  ---      -     -     -     -  *** 30F
11:45:21.35  ---      -     -     -     -  *** 20A
11:46:20.75  ---      -     -     -     -  *** 20F
11:47:27.12  ---      -     -     -     -  *** 10A
11:47:37.08  SWS      -     -    10     -  VIS int.time changed from 25ms to 10ms.
11:47:40.27  SWS      -     -     -    50  NIR int.time changed from 150ms to 50ms.
```

11:47:42.05	SWS	-	-	-	-	Dark measurement started.
11:47:42.99	SWS	-	-	-	-	Manual scene recording started.
11:48:39.03	---	-	-	-	-	*** 10F
11:49:44.53	---	-	-	-	-	*** 0 degrees
11:49:51.73	SWS	-	-	-	25	NIR int.time changed from 50ms to 25ms.
11:49:55.27	SWS	-	-	-	-	Dark measurement started.
11:49:55.96	SWS	-	-	-	-	Manual scene recording started.
11:51:16.31	SWS	6F	-	-	-	Telescope position set to 6F
11:53:51.57	SWS	174R	-	-	-	Telescope position set to 174R
11:53:55.45	SWS	-	-	75	-	VIS int.time changed from 10ms to 75ms.
11:53:58.79	SWS	-	-	-	200	NIR int.time changed from 25ms to 200ms.
11:54:00.95	SWS	-	-	-	-	Dark measurement started.
11:54:02.53	USH	-	-	-	-	Dark measurement started.
11:54:02.54	LSH	-	-	-	-	Dark measurement started.
11:54:03.38	SWS	-	-	-	-	Manual scene recording started.
11:54:06.00	USH	-	-	-	-	Manual scene recording started.
11:54:08.18	LSH	-	-	-	-	Manual scene recording started.
11:55:03.88	SWS	6F	-	-	-	Telescope position set to 6F
11:55:09.86	SWS	-	-	10	-	VIS int.time changed from 75ms to 10ms.
11:55:12.89	SWS	-	-	-	75	NIR int.time changed from 200ms to 75ms.
11:55:15.98	SWS	-	-	-	50	NIR int.time changed from 75ms to 50ms.
11:55:18.62	SWS	-	-	-	-	Dark measurement started.
11:55:19.57	SWS	-	-	-	-	Manual scene recording started.
11:59:31.57	SWS	174R	-	-	-	Telescope position set to 174R
11:59:35.27	SWS	-	-	75	-	VIS int.time changed from 10ms to 75ms.
11:59:38.52	SWS	-	-	-	200	NIR int.time changed from 50ms to 200ms.
11:59:41.45	USH	-	-	-	-	Dark measurement started.
11:59:41.46	LSH	-	-	-	-	Dark measurement started.
11:59:41.48	SWS	-	-	-	-	Dark measurement started.
11:59:44.28	SWS	-	-	-	-	Manual scene recording started.
11:59:44.97	USH	-	-	-	-	Manual scene recording started.
11:59:47.08	LSH	-	-	-	-	Manual scene recording started.
12:00:45.34	SWS	6F	-	-	-	Telescope position set to 6F
12:00:48.54	SWS	-	-	10	-	VIS int.time changed from 75ms to 10ms.
12:00:51.74	SWS	-	-	-	75	NIR int.time changed from 200ms to 75ms.
12:00:53.90	SWS	-	-	-	-	Dark measurement started.
12:00:55.08	SWS	-	-	-	-	Manual scene recording started.
12:05:22.39	SWS	174R	-	-	-	Telescope position set to 174R
12:05:35.48	SWS	-	-	75	-	VIS int.time changed from 10ms to 75ms.
12:05:38.84	SWS	-	-	-	200	NIR int.time changed from 75ms to 200ms.
12:05:41.10	SWS	-	-	-	-	Dark measurement started.
12:05:43.55	SWS	-	-	-	-	Manual scene recording started.
12:06:42.03	SWS	6F	-	-	-	Telescope position set to 6F
12:06:46.85	SWS	-	-	10	-	VIS int.time changed from 75ms to 10ms.
12:06:49.37	SWS	-	-	-	75	NIR int.time changed from 200ms to 75ms.
12:06:59.71	SWS	-	-	-	50	NIR int.time changed from 75ms to 50ms.
12:07:02.48	SWS	-	-	-	-	Dark measurement started.
12:07:03.41	SWS	-	-	-	-	Manual scene recording started.
12:09:01.96	SWS	-	-	-	25	NIR int.time changed from 50ms to 25ms.
12:09:04.20	SWS	-	-	-	-	Dark measurement started.
12:09:04.88	SWS	-	-	-	-	Manual scene recording started.
12:11:00.95	SWS	174R	-	-	-	Telescope position set to 174R
12:11:05.51	SWS	-	-	-	200	NIR int.time changed from 25ms to 200ms.
12:11:08.45	SWS	-	-	50	-	VIS int.time changed from 10ms to 50ms.
12:11:11.71	SWS	-	-	-	-	Dark measurement started.
12:11:11.75	USH	-	-	-	-	Dark measurement started.
12:11:11.97	LSH	-	-	-	-	Dark measurement started.
12:11:14.14	SWS	-	-	-	-	Manual scene recording started.
12:11:15.34	USH	-	-	-	-	Manual scene recording started.
12:11:17.55	LSH	-	-	-	-	Manual scene recording started.
12:12:04.90	SWS	6F	-	-	-	Telescope position set to 6F
12:12:08.55	SWS	-	-	10	-	VIS int.time changed from 50ms to 10ms.
12:12:11.78	SWS	-	-	-	50	NIR int.time changed from 200ms to 50ms.
12:12:13.45	SWS	-	-	-	-	Dark measurement started.
12:12:14.41	SWS	-	-	-	-	Manual scene recording started.
12:12:20.07	SWS	-	-	-	25	NIR int.time changed from 50ms to 25ms.
12:12:21.65	SWS	-	-	-	-	Dark measurement started.
12:12:22.34	SWS	-	-	-	-	Manual scene recording started.
12:16:50.54	SWS	174R	-	-	-	Telescope position set to 174R

12:16:54.89	SWS	-	-	75	-	VIS int.time changed from 10ms to 75ms.
12:16:58.35	SWS	-	-	-	150	NIR int.time changed from 25ms to 150ms.
12:17:00.72	SWS	-	-	-	-	Dark measurement started.
12:17:02.67	SWS	-	-	-	-	Manual scene recording started.
12:20:11.08	---	-	-	-	-	*** thin cirrus above
12:20:28.73	---	-	-	-	-	*** nadir views for the moment
12:58:02.37	LSH	-	-	-	-	Dark measurement started.
12:58:02.39	SWS	-	-	-	-	Dark measurement started.
12:58:02.65	USH	-	-	-	-	Dark measurement started.
12:58:04.50	SWS	-	-	-	-	Manual scene recording started.
12:58:06.22	USH	-	-	-	-	Manual scene recording started.
12:58:08.33	LSH	-	-	-	-	Manual scene recording started.
13:11:30.59	USH	-	-	-	-	Dark measurement started.
13:11:30.61	SWS	-	-	-	-	Dark measurement started.
13:11:30.65	LSH	-	-	-	-	Dark measurement started.
13:11:32.73	SWS	-	-	-	-	Manual scene recording started.
13:11:34.04	USH	-	-	-	-	Manual scene recording started.
13:11:36.45	LSH	-	-	-	-	Manual scene recording started.
13:23:12.83	SWS	6F	-	-	-	Telescope position set to 6F
13:23:16.15	SWS	-	-	10	-	VIS int.time changed from 75ms to 10ms.
13:23:18.33	SWS	-	-	-	75	NIR int.time changed from 150ms to 75ms.
13:23:20.81	SWS	-	-	-	-	Dark measurement started.
13:23:22.02	SWS	-	-	-	-	Manual scene recording started.
13:24:37.67	---	-	-	-	-	*** little bits cirrus above
13:26:16.67	---	-	-	-	-	*** now motly clear above
13:27:42.66	SWS	174R	-	-	-	Telescope position set to 174R
13:28:04.49	USH	-	-	-	-	Dark measurement started.
13:28:07.92	USH	-	-	-	-	Manual scene recording started.
13:28:08.87	LSH	-	-	-	-	Dark measurement started.
13:28:14.30	LSH	-	-	-	-	Manual scene recording started.
13:28:14.93	USH	-	-	-	-	Dark measurement started.
13:28:15.04	LSH	-	-	-	-	Dark measurement started.
13:28:15.19	SWS	-	-	-	-	Dark measurement started.
13:28:16.51	SWS	-	-	-	-	Manual scene recording started.
13:28:18.37	USH	-	-	-	-	Manual scene recording started.
13:28:20.59	LSH	-	-	-	-	Manual scene recording started.
13:28:30.04	SWS	-	-	75	-	VIS int.time changed from 10ms to 75ms.
13:28:34.20	SWS	-	-	-	200	NIR int.time changed from 75ms to 200ms.
13:28:36.56	SWS	-	-	-	-	Dark measurement started.
13:28:39.01	SWS	-	-	-	-	Manual scene recording started.
13:28:57.80	SWS	6F	-	-	-	Telescope position set to 6F
13:29:01.71	SWS	-	-	25	-	VIS int.time changed from 75ms to 25ms.
13:29:04.53	SWS	-	-	10	-	VIS int.time changed from 25ms to 10ms.
13:29:07.63	SWS	-	-	-	75	NIR int.time changed from 200ms to 75ms.
13:29:10.86	SWS	-	-	-	-	Dark measurement started.
13:29:12.04	SWS	-	-	-	-	Manual scene recording started.
13:32:22.27	---	-	-	-	-	*** end R3.1 start profile 3
13:32:33.87	---	-	-	-	-	*** P4
13:38:20.98	SWS	174R	-	-	-	Telescope position set to 174R
13:38:24.22	SWS	-	-	75	-	VIS int.time changed from 10ms to 75ms.
13:38:26.77	SWS	-	-	-	200	NIR int.time changed from 75ms to 200ms.
13:38:29.42	SWS	-	-	-	-	Dark measurement started.
13:38:31.86	SWS	-	-	-	-	Manual scene recording started.
13:38:50.64	---	-	-	-	-	*** sws to 172Aft for profil climb
13:50:40.63	---	-	-	-	-	*** end P start R
13:50:56.81	---	-	-	-	-	*** at FL200
13:52:00.88	SWS	174R	-	-	-	Telescope position set to 174R
13:52:06.48	LSH	-	-	300	-	VIS int.time changed from 200ms to 300ms.
13:52:11.38	SWS	-	-	100	-	VIS int.time changed from 75ms to 100ms.
13:52:14.49	SWS	-	-	-	300	NIR int.time changed from 200ms to 300ms.
13:52:18.29	SWS	-	-	-	250	NIR int.time changed from 300ms to 250ms.
13:52:28.58	SWS	-	-	-	-	Dark measurement started.
13:52:28.58	LSH	-	-	-	-	Dark measurement started.
13:52:28.60	USH	-	-	-	-	Dark measurement started.
13:52:31.53	SWS	-	-	-	-	Manual scene recording started.
13:52:32.51	USH	-	-	-	-	Manual scene recording started.
13:52:34.22	LSH	-	-	-	-	Manual scene recording started.
14:04:15.21	---	-	-	-	-	*** end run and start profile descent
14:04:20.12	SWS	6F	-	-	-	Telescope position set to 6F

14:04:24.53	SWS	-	-	-	400	NIR int.time changed from 250ms to 400ms.
14:04:28.43	SWS	-	-	-	500	NIR int.time changed from 400ms to 500ms.
14:04:31.04	SWS	-	-	75	-	VIS int.time changed from 100ms to 75ms.
14:04:55.85	---	-	-	-	-	*** sws to 3F for profile descent
14:10:35.21	---	-	-	-	-	*** just ino the dust
14:10:41.05	SWS	-	-	50	-	VIS int.time changed from 75ms to 50ms.
14:10:43.64	SWS	-	-	-	300	NIR int.time changed from 500ms to 300ms.
14:10:46.44	SWS	-	-	-	-	Dark measurement started.
14:10:49.90	SWS	-	-	-	-	Manual scene recording started.
14:15:30.64	SWS	-	-	-	200	NIR int.time changed from 300ms to 200ms.
14:15:34.28	SWS	-	-	25	-	VIS int.time changed from 50ms to 25ms.
14:15:37.35	SWS	-	-	-	-	Dark measurement started.
14:15:37.39	USH	-	-	-	-	Dark measurement started.
14:15:37.41	LSH	-	-	-	-	Dark measurement started.
14:15:39.64	SWS	-	-	-	-	Manual scene recording started.
14:15:40.84	USH	-	-	-	-	Manual scene recording started.
14:15:43.04	LSH	-	-	-	-	Manual scene recording started.
14:24:39.98	SWS	-	-	-	100	NIR int.time changed from 200ms to 100ms.
14:24:42.55	SWS	-	-	-	-	Dark measurement started.
14:24:43.99	SWS	-	-	-	-	Manual scene recording started.
14:31:30.17	---	-	-	-	-	*** end of profile and landing at Nouakchott
14:31:50.44	---	-	-	-	-	*** sws to 90A and data stop

ARIES flight log

Flight: B301 | **page** 1 **of** 3

Date: 27/Jun/07 | **Operator(s):** S. Rogers | **Res:** 1 | **Gain A:** 2 **B:** 2

Loc./Notes: Niamey to Nouakchott.

Scans: *either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]".* ***View:*** *mirror angle.*

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
08 45 35	On the pan	1×60	CH	C	71	41	Script1 (1×60 C_{BB}; 1×60 H_{BB})
	↑ TAKEOFF						
10 14 42	FL230	1×60	CH	C	71	41	
10 15 59		480×1	N	C	71	42	Mostly (?) cloud below, surface visible. Some cloud above.
10 20 01		1×60	CH	C	71	41	
10 21 19		480×1	N	C	71	41	
10 25 22		1×60	~~CH~~ CH	C	71	41	
10 26 39		480×1	N	C	71	41	
10 30 45		1×60	CH	C	71	41	
10 31 57		480×1	N	C	71	41	
10 35 59		1×60	CH	C	71	41	
10 37 16		480×1	N	C	71	41	
10 41 18		1×60	CH	C	71	41	
10 42 32		480×1	N	C	71	41	
10 46 34		1×60	CH	C	71	41	
10 47 52		480×1	N	C	71	41	
10 51 51		1×60	CH	C	71	41	
10 53 03		480×1	N	C	71	41	Aborted at end of run.
10 53 54	↓	1×60	CH	C	71	41	
10 13 47	MPA 2300 asl	1×60	CH	C	71	41	~1000 ft above terrain. 245
10 15 03	~~[illegible]~~	360×1	N	C	71	41	Bumpy.
10 17 07	↑	1×60	CH	~~C~~	~~71~~	41	
11 18 22	3300 asl ???	360×1	N	C	71	41	
11 21 25		1×60	CH	C			
11 22 50		360×1	Z	O	70	41	Opens at 5h1
11 25 5-		120×1	N	C			
11 27 03		1×60	CH	C			
11 28 16		360×1	Z	O	71	42	
11 31 30		120×1	N	C	71	42	
11 32 39		1×60	CH	C			

ARIES flight log

Flight: B301 | page 2 of 3

Date: | Operator(s): | Res: | Gain A: B:

Loc./Notes:

Scans: *either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]".* ***View:*** *mirror angle.*

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
11 ~~37 30~~		360x1	Z	O	71	42	
11 36 49		120x1	N	C	71	43	
11 37 52		1x60	CH	C	71	43	
11 39 18		360x1	Z	O	71	43	
11 42 30		120x1	N	C	71	43	
11 43 44		1x60	CH	C			
11 45 04		360x1	Z	O	71	43	As CBB is wandering up again (used low/cold tropics pattern) I'm leaving
11 48 22		1x60	CH	O	71	44	the shutter open all the time to see
11 49 59		360x1	Z	O	71	44	if that helps keep it cool.
11 53 16		~~120~~x1	N	C			
11 54 57		1x60	CH	C	71	45	(*Nope HBB shows affected too much)
11 56 20		360x1	Z	O	71	45	Opens at start of row.
11 59 30		120x1	N	C	71	45	
12 00 39		1x60	CH	C	71	45	
12 02 00		360x1	Z	O	71	45	
12 05 15		120x1	N	C	71	45	
12 06 22		~~360x1~~	Z				← CH 1x60 'C'
12 ~~07~~ 40		360x1	Z	O	70	44	
12 10 54		120x1	N	C	71	45	
12 11 57		1x60	CH	C	71	45	
12 13 15		360x1	Z	O	70	45	Still low, still bumpy.
12 16 45		120x1	N	C	71	45	
12 17 55		1x60	CH	C	71	45	
12 19 13		480x1	N	C	71	45	
12 23 14		1x60	CH	C	71	44	
12 24 33		480x1	N	C	71	44	
12 28 35		1x60	CH	C	71	44	
12 29 58		480x1	N	C	71	44	Wadi below
12 33 54		1x60	CH	C	71	44	
12 35 18		480x1	N	C	71	44	
12 39 20		1x60	CH	C	71	44	

ARIES flight log

Flight: B301 | page 3 of 3

Date: | Operator(s): | Res: | Gain A: B:

Loc./Notes:

Scans: *either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]".* ***View:*** *mirror angle.*

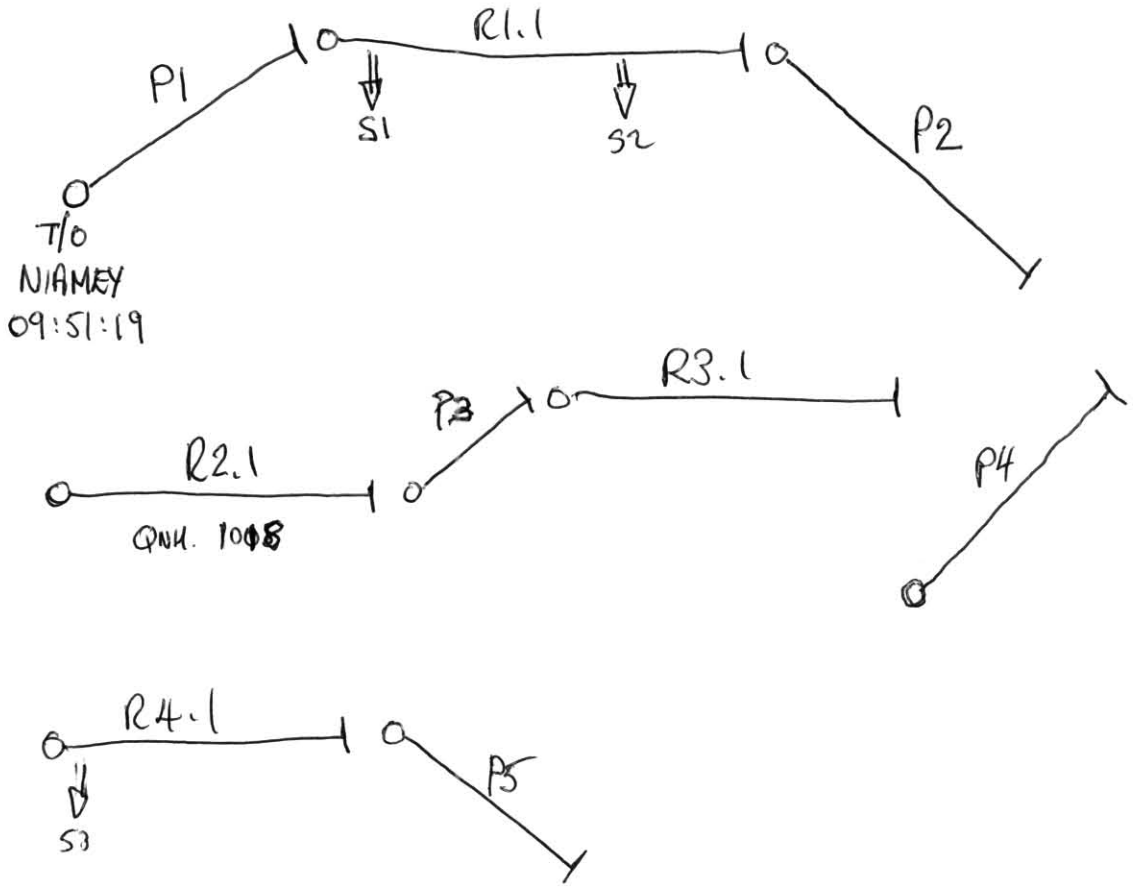
DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
12 40 38		480×1	N	C	71	43	13 30
12 44 39		1×60	CH	C	71	43	
12 46 04		480×1	N	C	71	43	
12 50 05		1×60	CH	C	71	43	
12 51 21		480×1	N	C	71	43	
12 55 25		1×60	CH	C	71	43	
12 56 54		1×60	CH	C	71	43	
12 58 09		480×1	N	C	71	43	
13 02 11		1×60	CH	C	71	43	
13 03 34		480×1	N	C	71	43	
13 07 35		1×60	CH	C	71	43	
13 08 54		480×1	N	C	71	43	Aborted: key fumble led to N+10°
13 09 36		360×1	N	C	71	43	
13 12 38		1×60	CH	C	71	43	
13 13 58		480×1	N	C	71	43	Still low, still bumpy.
13 18 00		1×60	CH	C	71	43	
13 19 19		480×1	N	C	71	43	
13 23 10		1×60	CH	C	71	43	
13 24 27		360×1	Z	O	70	43	
1327		120×1	N	C	71	44	
13 28		1×60	CH	C	71	44	
13 29 57		240×1	Z	O	71	44	Opening during start of view
13 32			CH				Aborted – too soon after shutter close
13 33 42		1×60	CH	C	71	44	
13 50 34	FL	1×60	CH	C	71	42	
13 51 55		480×1	N	C	71	41	
13 55 57		1×60	CH	C	71	41	
13 57 14		480×1	N	C	71	41	
14 01 21		1×60	CH	C	71	41	

B301

Flight Manager

- WON
- GIN
- GPS
- INU
- DRS
- JW
- PSAP

- HEIMANN



Flight: B301

KEY

- Not Fitted
- Fitted, Not Operated
- Duff Data
- Minor Problems
- OK

Thermometers
- Cabin Temperature:
- Heimann:
- Deiced Temp:
- Non-deiced Temp:

Hygrometers
- FWVS:
- General Eastern:
- Johnson Williams:
- Nevzorov:
- Total Water Probe:

Cameras
- Downward Facing:
- Forward Facing:
- Rearward Facing:
- Upward Facing:

Navigation + Aircraft
- Cruciform GPS:
- GIN Applanix:
- INU Honeywell:
- Radar Altimeter:
- RVSM IAS:
- RVSM Static Pressure:
- XR5 GPS:

Report Created 29/08/2007 08:43:43

Misc Core
- AMTG:
- AVAPS:
- Cabin Pressure:
- Fax machine:
- Printer:
- S9 Static Pressure:
- Satcom C:
- Satcom H:
- Turb Centre-Static:
- Turb Left Right:
- Turb Up-Down:
- Turb Horizontal Chk:
- Turb Vertical Chk:
- Weather Radar:

DLUs:
- DLU AERACK:
- DLU BBR Lower:
- DLU BBR Upper:
- DLU Core Chem:
- DLU Core Consoles:
- DLU Port Aft:
- DLU Port Fwd:
- DLU Stbd Fwd:

Radiometers
Lower:
- BBR (clear) Lower:
- BBR (IR) Lower:
- BBR (red) Lower:

Upper:
- BBR (clear) Upper:
- BBR (IR) Upper:
- BBR (red) Upper:

- ARIES:
- DEIMOS:
- IR Camera:
- JNO2 Lower:
- JNO2 Upper:
- JO1D Lower:
- JO1D Upper:
- MARSS:
- SHIMS Lower:
- SHIMS Upper:
- SWS:
- TAFTS:

Last Updated: 02/07/2007 13:31:23

Cloud Probes
- 2DC:
- 2DP:
- FFSSP:
- PCASP:

- ADA:
- CCN:
- CDP:
- CIP 100:
- CIP 25:
- CPI:
- CVI:
- SID1:
- SID2:

Aerosol
- CPC 3025A:
- Filters 47mm:
- Filters 90mm:
- Neph - Dry:
- Neph - Wet:
- PSAP:
- AMS:
- CPC 3025 (AMS)
- INC:
- VACC:
- CPC 3010A (CVI):

Chemistry
- CO Aerolaser 5002:
- NOx TE42C:
- Ozone TE49C:
- Ozone TE49:
- SO2 TE43C:
- TDLAS (NIR) CH4:
- TDLAS (NIR) CO2:

- FAGE:
- Formaldehyde:
- NOxy:
- ORAC:
- PAN:
- PERCA:
- Peroxide:
- PTRMS:
- TDLAS (1C):
- WAS Bags:
- WAS Bottles:

Misc Non-Core
- CASI/ATM:
- LIDAR:
- LTI:
- SAW Hygrometer:

Faults / Incidents Log

Flight No. B301
Date: 27 June 2007

Instruments

1. dry neph relative humidity suspect
2. nevz U/S
3. GIN data incorrect until rebooted about 13:40
4. de iced true temp isn't correct (JimH), possibly relates to true/dewpoint anomaly previously reported
5. ins velocity north; oscillations with 3 min period – example 1120 > 1150 (John Marsham)

Aircraft

Satcom-H Calls

Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: a) Nil b) 1-2 drops c) ¼ full or more d) Ice present
2. Emptied by:
3. Dried by:

New plot, same times

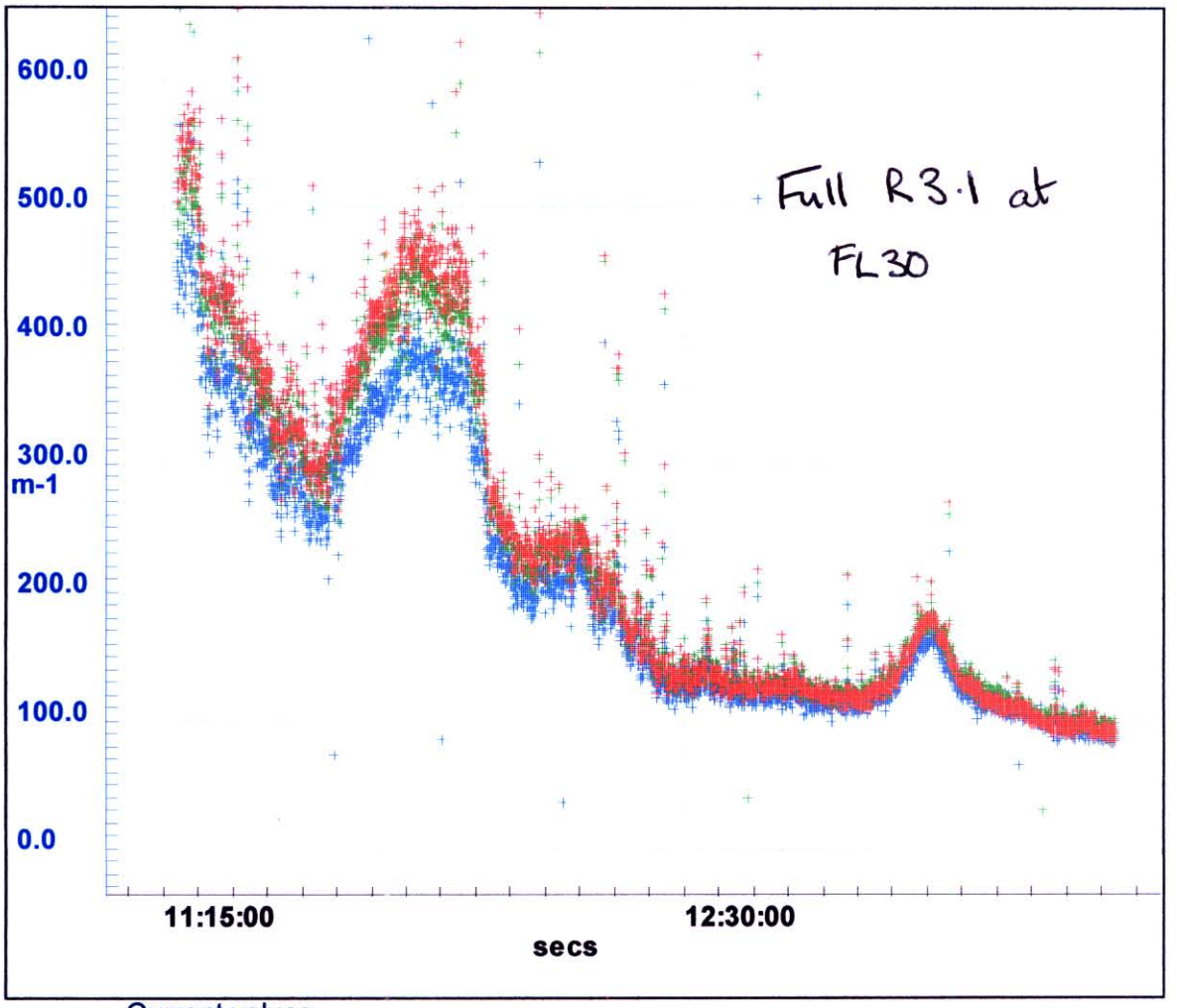
Flight B301 13:49:00

Heading 268 deg Speed 273 knots Height 18.6kft Press 492mb

Lat 17°48.0'NLong 12°54.0'W Wind 6 ms-1/ 83 deg

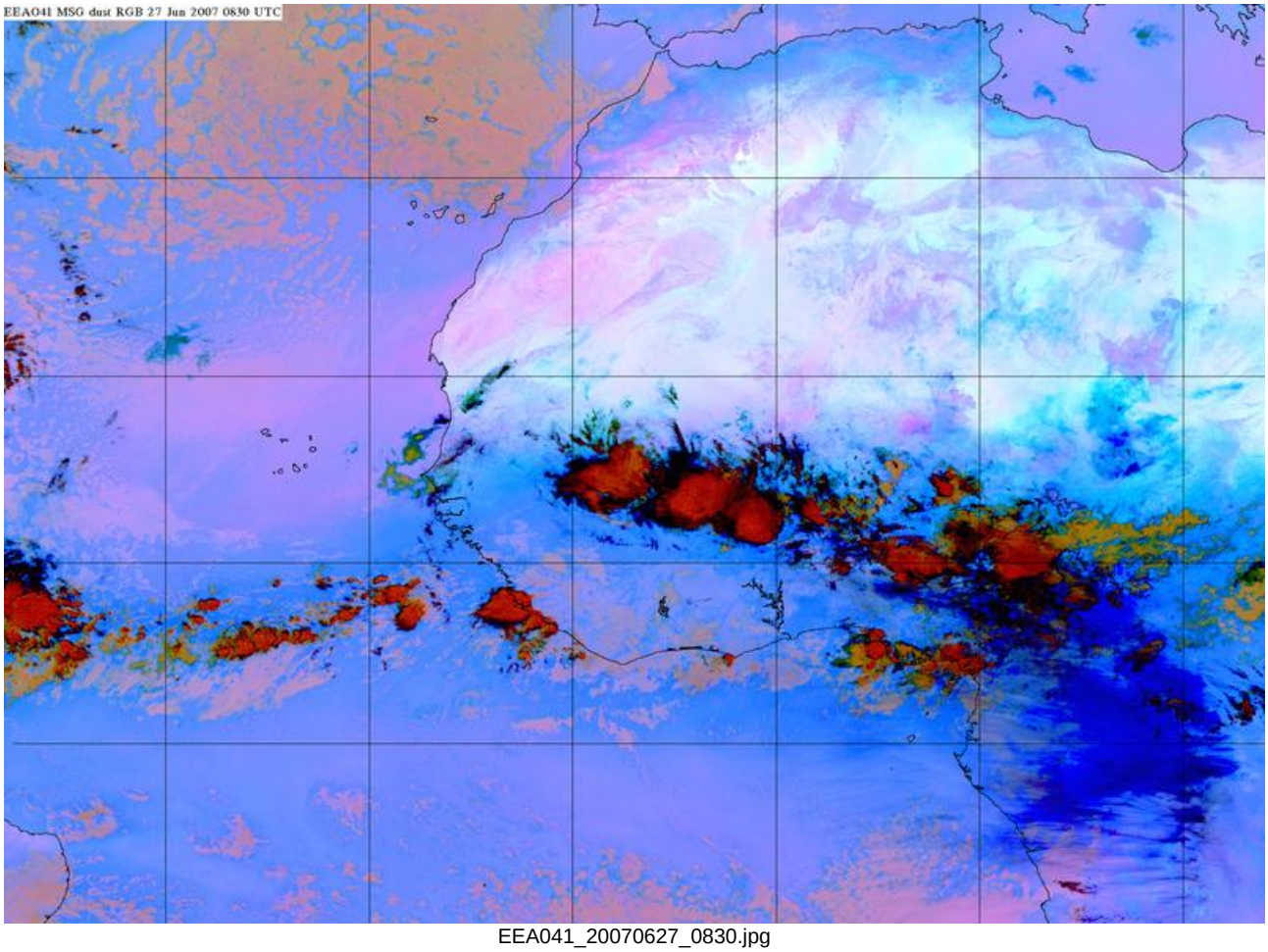
Temp -5.85C Dewpoint -36.49C

From 11:17 to 13:32

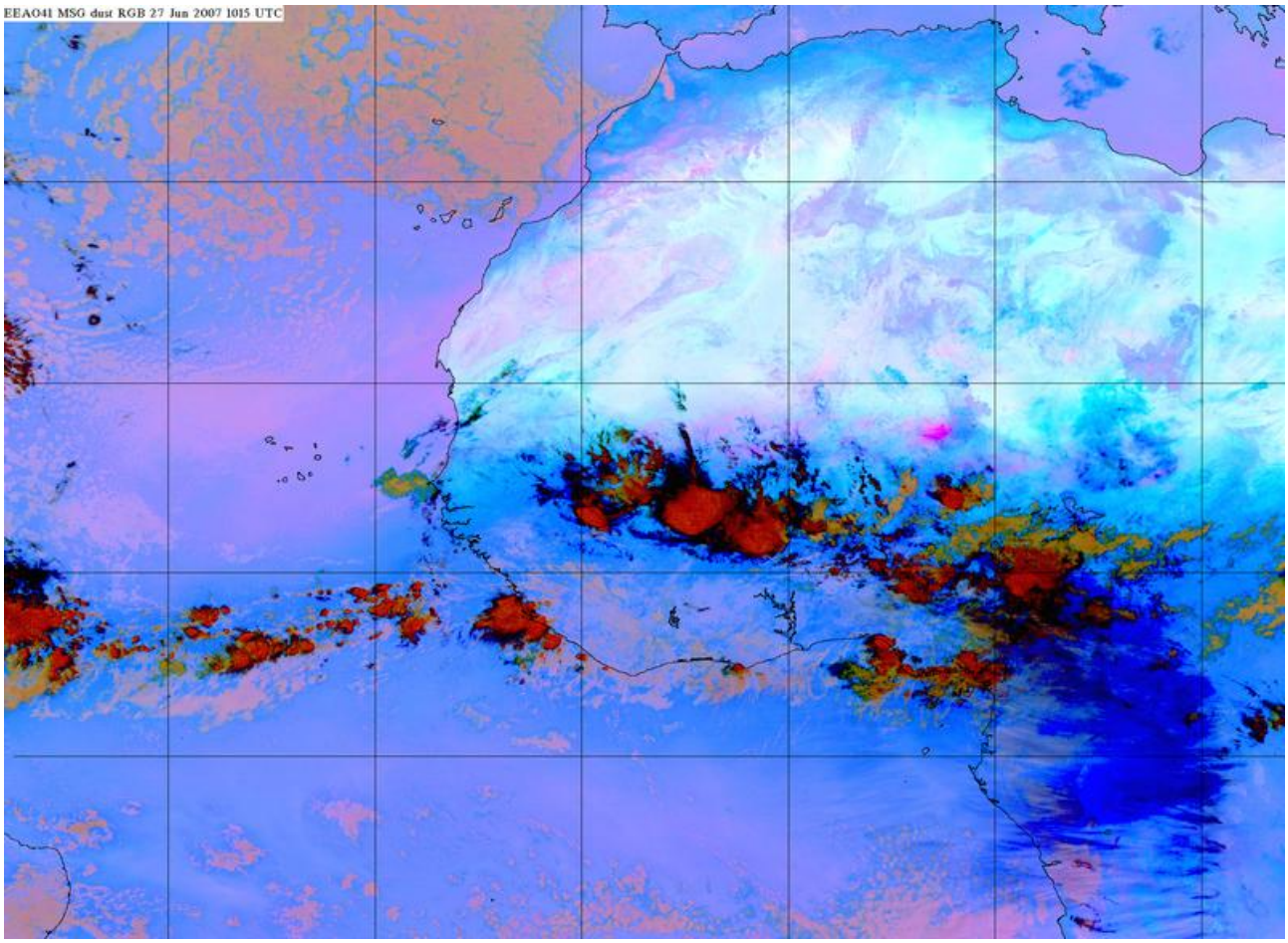


Current values			
TIME FROM MIDNIGHT	49737	secs	All
NEPH BLUE SP	1.37	m-1	
NEPH GREEN SP	0.1	m-1	
NEPH RED SP	-0.24	m-1	

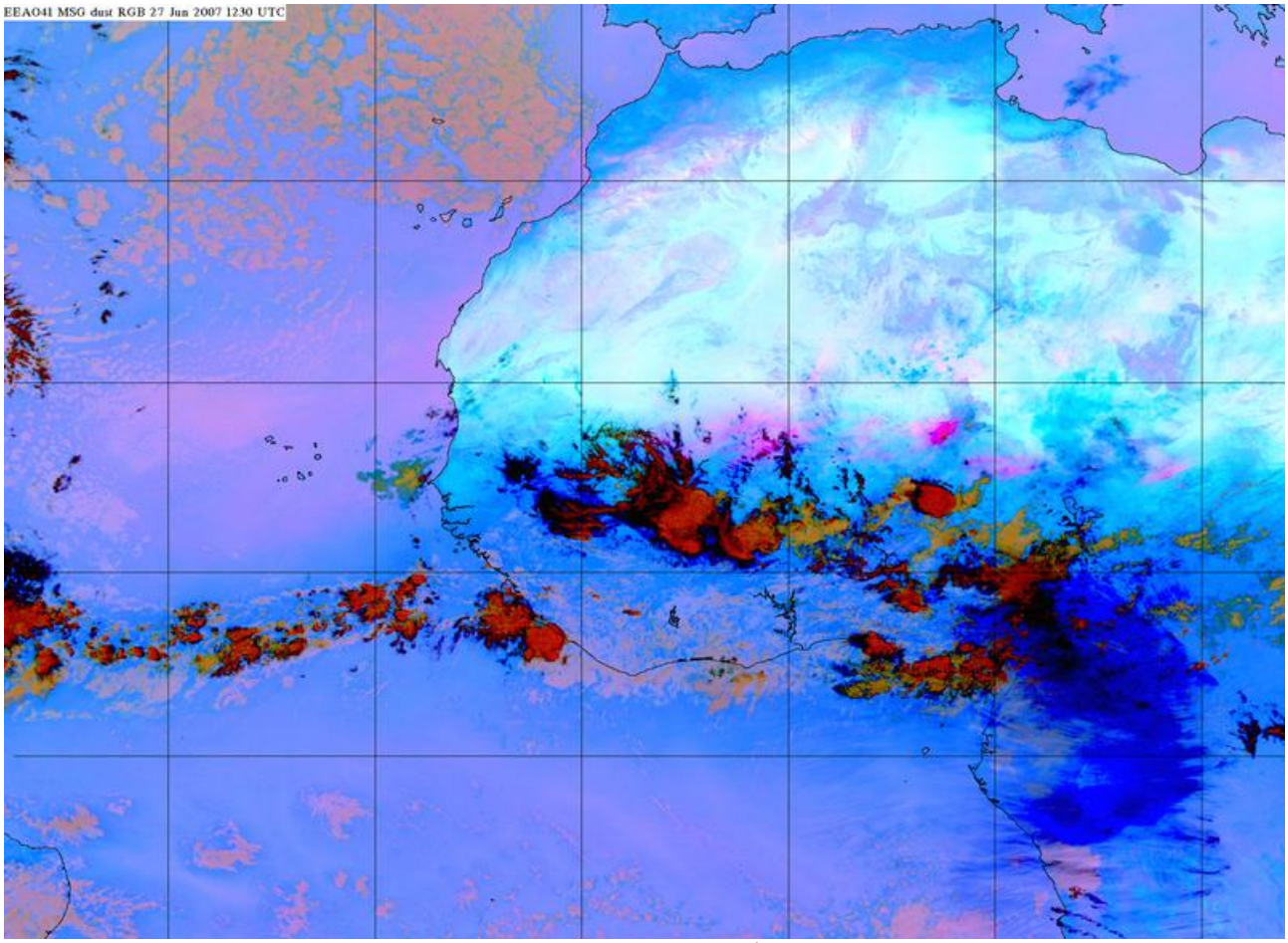
B301 Images Emailed In Flight



EEA041_20070627_0830.jpg



EEA041_20070627_1015.jpg



EEA041_20070627_1230.jpg

MISSING LOG SHEETS:

The following log sheets are not available for flight B301:

Log	Reason
Pre-flighter log	No log available
Cloud Physics Processing	Processing yet to be completed.
Core Chemistry	no In Flight log except in cases of instrument problems
PSAP log	No log as PSAP pump/filter info included on Flight Summary page
Wet Nephelometer	No operator on GERBIL

Document control

Revision	Date	Author	Comments
r0	05 Sep 2007	Doug Anderson	Initial version missing the above noted logs
r1			
r2			

VIDEO RECORDINGS:

3 x Forward Facing Cameras
3 x Downward Facing Cameras

Digital8 video recordings from this flight reside with :

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